AMENDMENTS TO THE SPECIFICATION

In the Specification

Please substitute the following amended paragraph(s) and/or section(s) (deleted matter is shown by strikethrough and added matter is shown by underlining):

Page 1, line 2, please add the following header:

Field of the Invention

Page 1, line 14, please add the following header:

Background of the Invention

Page 1, line 31 through page 2, line 2, please amend the following paragraph as follows:

For a high accuracy of a laser surgery method, it is indispensable to guarantee high localization of the effect of the laser beams and to avoid collateral damage to adjacent tissue as far as possible. It is, therefore, common in the prior art to apply the laser radiation in a pulsed form, so that the threshold value for the power density of the laser radiation required to cause an optical breakthrough is exceeded only during the individual pulses. In this regard, US 5,984,916 clearly shows that the spatial extension of the optical breakthrough (in this case, of the generated interaction) strongly depends on the pulse duration. Therefore, ~~high focussing~~ precise focusing of the laser beam in combination with very short pulses allows [[to]] the placement of the optical breakthrough in a material with great point accuracy.

Page 3, line 4, please add the following header:

Summary of the Invention

Page 3, line 20 through page 4, line7, please amend the following paragraphs as follows:

The invention assumes a projection geometry in which equidistant angular spacings of the deflection result in equidistantly located points in a plane perpendicular to the main axis of incidence. According to the invention, ~~it is ensured by~~ the use of non-equidistant angular distances ensures that, in the plane perpendicular to the main axis of incidence, the point distances vary such that the curved cut surface leads to equidistant locations of the optical breakthroughs ~~again~~.

The invention achieves ~~that~~ optical breakthroughs, which are adjacently located along a curve in the curved cut[[, are]] and equidistantly located within precisely determined limits. The distance of thus adjacent optical breakthroughs can now be adjusted such that a minimum number of optical breakthroughs are sufficient to generate a desired curved cut. Further, the distance can be reliably adjusted such that the optical breakthroughs are joined at a frequency which is as high as possible, without the danger of trying in vain to generate an optical breakthrough in a not yet collapsed plasma bubble of the adjacent optical breakthrough.

The invention provides flexibility as [[As]] regards the sequential arrangement of the breakthroughs~~, the invention provides a lot of liberty;~~. [[w]]What is ~~essential~~ desired for the approach according to the invention is merely that the breakthroughs adjacently arranged in a sequence satisfy the above-mentioned geometric conditions, whereby the curve can be linked with the time sequence in which the breakthroughs were generated and may, in particular, correspond to it.

At the same time, ~~it is an accomplishment of the concept according to~~ the invention ~~that it~~ enables working with ~~a usually very easy to perform~~ biaxial deflection [[for]] of the laser radiation generating the optical breakthroughs. This is usually very easy to perform. A complex two-dimensional displacement having no deflection about fixed axes, which could be achieved, for example, by two-dimensional displacement of an end of a light guide, is not required by the approach according to the invention.

Page 4, line 33 through page 5, line 6, please amend the following paragraph as follows:

The invention allows [[to set]] placement of the locations of the optical breakthroughs that are adjacent to each other along a curve with a precisely determined distance from each other by deflection of the laser beam. Since the cut is generated by two-dimensional deflection and the optical breakthroughs usually generate plasma bubbles having a generally spherical volume, the distance between randomly adjacent locations of the optical breakthroughs in the cut depends on the arrangement of the optical breakthroughs in the cut, which arrangement may be regarded, in simple approximation, as a planar lattice structure. The distance of a certain optical breakthrough from its neighbor varies ~~more or less strongly~~ according to the lattice structure. Due to this variation, it is not always required~~, in some cases,~~ to precisely set the same distance between the locations along the curve ~~very exactly~~. Rather, it is sufficient to keep the distance constant within certain tolerances.

Page 6, line 11 – line 16, please amend the following paragraph as follows:

In most cases, ophthalmic operations require approximately spherical cuts or spherically curved cuts with a cylindrical component, because the cornea of the eye is approximately

spherically curved. For such cuts, in particular, in the case of uniformly pulsed laser radiation, a deflection is advantageous wherein the speed of deflection change at the periphery of the region of the cut is smaller than at the center so as to consider for the increasing inclination of the cut surface at the periphery of said region relative to the plane of the two-dimensional deflection.

Page 7, line 14, please add the following heading:

Brief Description of the Drawings

Page 7, line 18 through line 29, please amend the following paragraphs as follows:

Fig. 1 ~~shows~~ is a perspective view of a patient during a laser-surgical treatment with a laser-surgical instrument,

Fig. 2 ~~shows~~ depicts the focusing of a ray bundle onto the eye of the patient with the instrument of Figure 1;

Fig. 3 ~~shows~~ is a schematic representation ~~explaining~~ of a cut generated during laser-surgical treatment with the instrument of Figure 1;

Fig. 4 ~~shows~~ depicts a deflection apparatus of the laser-surgical instrument of Figure 1;

Fig. 5 ~~shows~~ depicts the arrangement of optical breakthroughs for generating a cut with the laser-surgical instrument of Figure 1;

Fig. 6 ~~shows~~ is a graph illustrating the line deflection in the deflection function of Figure 4;

Fig. 7 ~~shows further~~ is a graph[[s]] of the control of the deflection apparatus of Figure 4, and

Fig. 8 ~~shows~~ depicts two time sequences of the control of the biaxial deflection according to Figure 4.

Page 7, line 30, please add the following header:

Detailed Description of the Invention

Page 7, line 37 through page 8, line 5, please amend the following paragraph as follows:

For this purpose, as schematically shown in Figure 2, the laser-surgical instrument 2 comprises a radiation source S whose radiation is focused into the cornea 5 of the eye 1. A visual defect in the eye 1 of the patient is remedied using the laser-surgical instrument 2 to remove material from the cornea 5 such that the refractive characteristics of the cornea are modified by a desired amount. In doing so, the material is removed from the corneal stroma, which is located beneath the epithelium and Bowman's membrane, above Descemet's membrane and the endothelium.